

**ABSTRACT OF THE DISCLOSURE:**

A method of controlling the gray scale of a plasma display device has a forming step of forming a frame for an image by a plurality of subframes each having a different brightness, a setting step of setting the number of sustain emissions of each subframe in an anti-geometrical progression corresponding to the brightness of each subframe, and a displaying step of displaying the image on the plasma display device by a gray scale display having a specific brightness. The number of sustain emissions in each subframe is set individually by the each subframe, and this establishes a linear relation between the gray level and the corresponding brightness. Therefore, an enhancement of display quality of the plasma display device can be realized.